# Slide 1: Visualize 2045 Logo. TPB Logo

# Presentation Title: Performance Analysis Summary

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Slide 2: What is the Performance Analysis?

Graphic showing how the Constrained Element Projects & Land-Use Forecasts are used to develop the Travel Demand Model, which results in Emissions and Performance Data

* Round 9.1 Cooperative Land-Use Forecasts
* Version 2.3.75 Travel Demand Model
* Analysis of TPB Planning Area
* 2016 Vehicle Registration Data
* EPA’s MOVES 2014a Mobile Emissions Model

Slide 3: Comparison of the Three Scenarios

1. Today (2019)

* Today’s households and jobs
* Projects on the ground in 2019

1. 2045 No-Build (Grow, but don’t build)

* Forecast growth for 2045 households and jobs
* No new projects beyond what is on the ground in 2019

1. 2045 Planned Build (Grow and build)

* Forecast growth for 2045 households and jobs
* All constrained element projects would be built by 2045

Slide 4: Performance Overview, Percent Change 2019-2045 Build

* Population – 23%
* Employment – 29%

Slide 5: How does the plan provide for a comprehensive range of transportation options?

Slide 6: All Trips: HOV surpasses SOV

HOV trips will be more common than driving alone. Walk and Bicycle trips increase by 49% and Transit trips increase by 38%.

Line graph showing comparison of use of HOV, SOV, Transit, and Walk and Bike today and in 2045 for all trips:

* Single Driver - from 7,054 today to 7,917 in 2045
* Transit - from 1,126 today to 1,550 in 2045
* HOV and carpool - from 6,813 today to 8,224 in 2045
* Walk and bike - from 2,107 today to 3,128 in 2045

Pie chart showing Mode share in 2045 for all trips:

* 40% HOV and Carpool
* 38% Single Driver
* 15% Walk and Bike
* 7% Transit

Slide 7: All-Trips: Geographic Differences

Majority of trips will continue to be generated in the Inner Suburbs. Walk, Bike, and Transit shares decline the further one is from the core.

Graph of trips by mode in 2045 in different parts of the region.

Regional Core:

* District of Columbia
* Arlington County
* Alexandria
  + 1,342 (33%) Walk and Bike
  + 716 (18%) Transit
  + 960 (24%) HOV and Carpool
  + 989 (25%) Single Driver

Inner Suburbs:

* Montgomery County
* Prince George’s County
* Fairfax County
* Falls Church
  + 1,373 (12%) Walk and Bike
  + 753 (7%) Transit
  + 4,782 (42%) HOV and Carpool
  + 4,409 (39%) Single Driver

Outer Suburbs:

* Charles County
* Frederick County
* Prince William County
* Loudoun County
* Manassas Park
* Fauquier County urbanized area
  + 413 (8%) Walk and Bike
  + 82 (1%) Transit
  + 2,482 (45%) HOV and Carpool
  + 2,519 (46%) Single Driver

Slide 8: Average driving per person decrease

Total daily driving in the region is expected to grow but at a rate lower than population growth.

Bar graph of Vehicle Miles Travelled Per Capital (Today-2045)

* Change in population 23%
* Change in vehicle miles traveled (VMT) 20%

Slide 9: Travel on reliable modes will increase

A 59% increase in the proportion of daily travel on reliable modes in 2045 Build relative to Today suggest people will use modes with greater reliability if available.

Bar graph of Percent of Daily Person Miles Travelled on Reliable Modes (2045) -

*Includes express toll lanes with dynamic toll rates (HOT), HOV lanes, the ICC, Dulles Airport Access Road, Metrorail, Commuter Rail, Light Rail, Streetcar, Bus Rapid Transit, long-haul express buses, and bike and pedestrian*

* Today – 9.6%5.7 million people today
* 2045 No Build – 11.2%
* 2045 Build – 15.3%

Slide 10: How does the plan affect commuting to work?

Slide 11: Work Trips: Driving alone predominates

Though Walk and Bicycle trips increase by 68% and Transit trips increase by 37%.

Line graph showing comparison of use of HOV, SOV, Transit, and Walk and Bike today and in 2045 for work trips:

Single Driver - from 2,006 today to 2,324 in 2045

Transit - from 806 today to 1,106 in 2045

HOV and carpool - from 341 today to 445 in 2045

Walk and bike - from 159 today to 268 in 2045

Pie chart showing Mode share in 2045 for work trips:

11% HOV and Carpool

56% Single Driver

6% Walk and Bike

27% Transit

Slide 12: Work Trips: Geographical Differences

In the Region Core workers are more likely to use transit. Outside the core driving alone is the predominant mode.

Graph of work trips by mode in 2045 in different parts of the region.

Regional Core:

* District of Columbia
* Arlington County
* Alexandria
  + 161 (18%) Walk and Bike
  + 485 (55%) Transit
  + 42 (5%) HOV and Carpool
  + 191 (22%) Single Driver

Inner Suburbs:

* Montgomery County
* Prince George’s County
* Fairfax County
* Falls Church
  + 89 (4%) Walk and Bike
  + 546 (25%) Transit
  + 232 (11%) HOV and Carpool
  + 1,340 (61%) Single Driver

Outer Suburbs:

* Charles County
* Frederick County
* Prince William County
* Loudoun County
* Manassas Park
* Fauquier County urbanized area
  + 18 (2%) Walk and Bike
  + 75 (7%) Transit
  + 171 (16%) HOV and Carpool
  + 793 (75%) Single Driver

Slide 13: How does the plan affect transit access and connectivity?

Slide 14: Increase in People and Jobs close to High Capacity Transit (HCT)

Bar graph showing percent of population and jobs in proximity to HCT.

“Proximity” defined as within one mile of rail or within a ½ mile of bus rapid transit (BRT).

“High-capacity transit” defined to include Metrorail, commuter rail, streetcar, light rail or BRT.

* Population – 29% Today, 51% 2045
* Employment – 38% today, 59% 2045

Slide 15: Increase in People and Jobs close to High Capacity Transit (HCT)

Bar graph showing % of Population in Proximity to HCT

“Proximity” defined as within one mile of rail or within a ½ mile of bus rapid transit (BRT).

“High-capacity transit” defined to include Metrorail, commuter rail, streetcar, light rail or BRT.

Regional Core – Today 72.2%, 2045 74.7%

Inner Suburbs – Today 23.8%, 2045 37.6%

Outer Suburbs – Today 5.3%, 2045 7.4%

Bar graph showing % of Jobs in Proximity to HCT

“Proximity” defined as within one mile of rail or within a ½ mile of bus rapid transit (BRT).

“High-capacity transit” defined to include Metrorail, commuter rail, streetcar, light rail or BRT.

Regional Core – Today 90.9%, 2045 91.8%

Inner Suburbs – Today 35.7%, 2045 52.7%

Outer Suburbs – Today 11.3%, 2045 14.9%

Slide 16: Change in Access to Jobs (in thousands) by Transit – Today to 2045 No Build

Today 369, 2045 444 – an increase of 20%

*These numbers represent the average number of jobs accessible via transit within a 45-minute commute based on where people live.*

Map of the region showing change in number of jobs within 45 minutes by impact. For more information on what this map shows, please reach out to COG staff

Slide 17: Change in Access to Jobs (in thousands) by Transit – Today to 2045 Build

Today 369, 2045 518 – an increase of 40%

*These numbers represent the average number of jobs accessible via transit within a 45-minute commute based on where people live.*

Map of the region showing change in number of jobs within 45 minutes by impact. For more information on what this map shows, please reach out to COG staff.

There is definite difference between the two scenarios.

Slide 18: How will roadway congestion change?

Slide 19: System-wide roadway congestion will increase

* By 2045, congested lane miles during the AM peak will increase from 1,857 to 2,660, a 43% increase to Today.
* Share of lane miles congested make up a small but growing percent of roadways.
* Congested lane miles will be 21% lower than in No Build scenario (Grow but don’t build).

Bar graph of Share of Total Lane Miles Congested (AM Peak) by scenario

* Today 11%
* 2045 No Build 20%
* 2045 Build 14%

Slide 20: Lost time in traffic

If we grow and don’t build, total vehicle hours of delay will double and avg. delay per trip will grow by 3 mins 30 secs.

Graph showing Total Daily Vehicle Hours of Delay for No Build

* Today 1,181, 2045 2,333, an increase of 98%

Graph showing Average Minutes of Delay per Trip for No Build

* Today 5.29, 2045 8.89, an increase of 68%

Slide 21: Lost time in traffic

If we grow and build what is planned, total vehicle hours of delay and avg. delay per trip will still grow though less severe.

Graph showing Total Daily Vehicle Hours of Delay for Build (with comparison to prior No Build graph)

Today 1,181, 2045 1,729, an increase of 46%

Graph showing Average Minutes of Delay per Trip for Build (with comparison to prior No Build graph)

Today 5.29, 2045 6.64, an increase of 25%

Slide 22: Roadway congestion

2045 Major Highway Congestion (AM Peak, General Purpose Lanes)

* Congestion on many segments of the region’s major highway system is expected to get worse.
* Some segments will see relief due to capacity expansions, inclusion of managed lane projects, or Metro core capacity expansion.
* All tolled managed lanes facilities (not shown) are projected to experience free flow conditions in 2045 as designed.

Map of Congestion Levels:

* Increased Congestion – I-70, VA-267 East, I-95 North
* Reduced Congestion – I-95, I-495/I-95 inner and outer loop, I-95 southbound northern Prince William County

Slide 23: Change in Access to Jobs (in thousands) by Auto (Today to 2045)– No Build

If we grow and do not build, the region will experience significant declines in job access in 2045 compared to today.

864 Today, 770 2045 – a decrease of 11% in job access

Map of Change in number of jobs within 45 minutes by impact. These numbers represent the average number of jobs accessible via transit within a 45-minute commute based on where people live. For more information on what this map shows, please reach out to COG staff.

Slide 24: Change in Access to Jobs (in thousands) by Auto (Today to 2045)– Build

If we grow and build as planned, the region will experience more access to jobs on average. Some areas will continue to see declines in access to jobs within 45 mins.

864 Today, 909 2045, an increase of 5% in job access

Map of Change in number of jobs within 45 minutes by impact. These numbers represent the average number of jobs accessible via transit within a 45-minute commute based on where people live. For more information on what this map shows, please reach out to COG staff.

Slide 25: Findings overview

* Growth in the region will continue to place demand on the transportation network.
* The region will employ various elements to meet the demand and make progress towards regional transportation policies, however, challenges will continue to exist though at levels less severe than identified in previous analyses.
* HOV will be more common than driving alone.
* Walk and bicycle trips increase by 49% and Transit trips increase by 38%.
* The average person will drive 3% decrease in 2045 (miles).

Slide 26: Findings overview, contd.

* Use of reliable modes, including managed lanes and HOT lanes, high capacity transit, and walk and bike facilities, increase by 6% points.
* By 2045, 38% of people and 59% of jobs will be close to High Capacity Transit.
* By 2045, total vehicle hours of delay increase by 46% and avg. delay per trip increase by 25%.
* The region will experience increase of 40% in transit and increase of 5% in highway access to jobs, although some areas will still see declines.

Slide 27:

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